INDEX TO VOLUME XLIX

Abandonment of the concept of grade in streams, advantages resulting from the (J. E. Kesseli), 583

Abrasion, analytical theory of (W. C. Krumbein), 497
the effects of, on the size, shape, and roundness of rock fragments (W. C. Krumbein), 482
theory, geological applications of (W. C. Krumbein), 510

Absaroka Range, geology along the southern margin of the: a reply (J. D. Love), 101

Acheloma cumminsi Cope in Texas redbeds (E. C. Olson), 151
pricei n. sp. of Texas redbeds (E. C. Olson), 153
of Texas redbeds (E. C. Olson), 150
whitei n. sp. of Texas redbeds (E. C. Olson), 154

Acid clay—an agent in chemical weathering (E. R. Graham), 392

Active syncline, an (R. H. Palmer), 772

Activity of Lassen Peak (C. R. Swartzlow), 405

Adsorptive capacity of crystalline rocks (G. W. Bain), 205

Advantages resulting from the abandonment of the concept of grade in streams (J. E. Kesseli), 583

Agar, W. M. Cited on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 181

Agassiz Glacier, Montana (J. L. Dyson), 820

Age of Appalachian erosion surfaces (W. S. Cole), 146
of Fifes Peak andesite, Mount Aix quadrangle, Washington (W. C. Warren), 808
geologic, persistence of heavy minerals and (F. J. Pettijohn), 610
of lower part of Keechelus andesitic series, Washington (W. C. Warren), 810
of McPherson deposits, Kansas (J. C. Frye and C. W. Hibbard), 271
of Methow glaciation, Washington (J. D. Barksdale), 735
relations of Okanogan intrusive rocks, Washington (K. B. Krauskopf), 52
relative, of central Texas granites (S. S. Goldich), 719

Agent, an, in chemical weathering—acid clay (E. R. Graham), 392

Agitated water as criterion for determining rip currents, southern California (F. P. Shepard *et al.*), 341

Agmatitic breccias, Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 599

Albuquerque-Belen Valley, New Mexico (C. S. Denny), 234, 235

Alden, W. C. Cited on glaciers of Glacier National Park, Montana (J. L. Dyson), 816

Alignment of saddles as criterion for location of faults in southern California (W. J. Miller), 93
of scarps, ridges, and depressions as criterion for location of faults in southern California (W. J. Miller), 96
of springs as criterion for location of faults in southern California (W. J. Miller), 96

Alkaline rocks of Kruger Mountain, Washington (K. B. Krauskopf), 23

Allanite in Okanogan Valley, Washington (K. B. Krauskopf), 39

Allens Park, Colorado (McClelland Dings), 825

Allison, Ira S. *Flint's fill hypothesis of origin of Scabland*, 54

Alteration, wall-rock, at Night Hawk Peninsular Mine, Night Hawk Lake, Ontario (A. R. Byers), 279

Altimetric curves of summits, Appalachian Mountains (H. D. Thompson), 525

Altitudes of ridges, Monterey, Staunton, and Harrisonburg quadrangles, Virginia–West Virginia (H. D. Thompson), 537

Amebelodon cf. *fricki* Barbour in Emma Creek formation, Kansas (J. C. Frye and C. W. Hibbard), 276

American doctorates in geology, 1931–40 (Louis L. Ray), 854

American empire, the. William H. Haas (ed.). Review by C. W. Sternberg, 672

Amphibole in Okanogan Valley, Washington (K. B. Krauskopf), 44

An agent in chemical weathering—acid clay (E. R. Graham), 392

Analysis, topographic, of the Monterey, Staunton, and Harrisonburg quadrangles (H. D. Thompson), 521

Analytical theory of abrasion (W. C. Krumbein), 497

Andesite porphyry in Keechelus andesitic series, Washington (W. C. Warren), 802

Andesitic series, Keechelus, relation of the Yakima basalt to the (W. C. Warren), 795

Andes-Wallpack section of Appalachian erosion surfaces (W. S. Cole), 143

Angle point (D. J. Fisher), 311, 313, 315
problem (D. J. Fisher), 323, 420, 424
true (D. J. Fisher), 304

Angular distance between two points (D. J. Fisher), 305

Antecedent stream, hypothesis of, in Ozark segment of Mississippi River (R. F. Flint), 633

An unusual landslide (R. H. Mitchell), 382

Apatite in Okanogan Valley, Washington (K. B. Krauskopf), 39

Aplite and pegmatite in central Texas (S. S. Goldlich), 708

Appalachian erosion surfaces, nomenclature and correlation of (W. S. Cole), 129
Valley (B. C. Moneymaker), 76

Appearance of a fully loaded stream (J. E. Kesseli), 579

Applications of the distance problem (D. J. Fisher), 319

Area, San Acacia, New Mexico, quaternary geology of (C. S. Denny), 225
Snoqualmie-Cedar, Washington, glacial geology of the (J. Hoover Mackin), 449

Arroyo cutting, San Acacia area, New Mexico (C. S. Denny), 247

Artificial structures, relation of rip currents (F. P. Shepard *et al.*), 344

Ashley, G. H. Cited on age of Appalachian erosion surfaces (W. S. Cole), 147
Cited on peneplain criteria in Pennsylvania (H. D. Thompson), 522, 549

Bain, George W. *Measuring grain boundaries in crystalline rocks*, 199

Baker, the Trabuco and, conglomerates of the Santa Ana Mountains (W. P. Popenoe), 738

Banded gneiss, zone of, in Washington (K. B. Krauskopf), 9

Barbour, E. H. Cited on Daemonelix structure (A. L. Lugn), 674

Barksdale, Julian D. *Glaciation of the Methow Valley, Washington*, 721

Barrell, J. Cited on marine and terrestrial conglomerates (W. P. Popenoe), 748
Cited on the geology of Marysville mining district, Montana (G. M. Schwartz and J. H. Todd), 186

Barth, T. F. W. Cited on metamorphic rocks of Dutchess County, New York (G. M. Schwartz and J. H. Todd), 186

Basin structures, deep-zone dome and (T. T. Quirke and W. C. Lacy), 589

Bauer, C. Max. Cited on geology of the Absaroka Range, Wyoming (J. D. Love), 101

Baulig, H. Cited on criteria for graded conditions in rivers (J. E. Kesseli), 564

Baylorei morei near Seymour, Texas (E. C. Olson), 753

Beaches, effect of rip currents on, southern California (F. P. Shepard *et al.*), 364
relation of rip currents to, southern California (F. P. Shepard *et al.*), 360

Bear Mountain granite in central Texas (S. S. Goldich), 706

Beavers associated with Daemonelix beds (A. L. Lugn), 684

Becke, F. Cited on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 177

Bedrock solution, relation of ideal pattern of ground-water flow to (R. Rhoades and M. N. Sinacori), 791

Beede, J. W., and Erasmus Haworth. Cited on "McPherson Equus Beds," Kansas (J. C. Frye and C. W. Hibbard), 263, 266

Big Horn Basin, mineral persistence in formations of (F. J. Pettijohn), 624

Billings, M. P. Cited on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 180, 185

Bingham, Oren R., and Kenneth K. Landes. Resource-Full Kansas. Review by C. W. Sternberg, 448

Biotite in Okanogan Valley, Washington (K. B. Krauskopf), 43

Bison occidentalis Lucas in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 275

Blackfoot Glacier, Montana (J. L. Dyson), 819

Border rocks, Red Lake area, Ontario (W. K. Gummer), 644

Border rocks of a granite batholith, Red Lake, Ontario (W. K. Gummer), 641

Boswell, P. G. H. Cited on similar reciprocal relations of minerals (F. J. Pettijohn), 622

Boulder County, Colorado (McClelland Dings), 825

Boundaries, measuring grain, in crystalline rocks (G. W. Bain), 199

Bragg, W. L. Cited on nonisomorphous crystal systems (E. R. Graham), 401

Brammall, A., and H. F. Harwood. Cited on granitic types at Dartmoor, England (K. B. Krauskopf), 32

Breached anticlines in Monterey, Staunton, and Harrisonburg quadrangles, Virginia–West Virginia (H. D. Thompson), 541

Breaker zone, relation of rip currents to, southern California (F. P. Shepard *et al.*), 350

Bretz, J Harlen. Geology of the Chicago region. Review by George M. Stanley, 446
Cited on "bars" in Snake River Canyon, Washington (I. S. Allison), 62
Cited on glaciation of Puget region (J. Hoover Mackin), 450
Cited on "Spokane flood," Washington (I. S. Allison), 55

Byers, A. Roddick. *Wall-rock alteration at Night Hawk Peninsular Mine, Night Hawk Lake, Ontario*, 279

Cable, E. J. *et al.* The physical sciences. Review by C. W. Sternberg, 781

Caliche in San Acacia area, New Mexico (C. S. Denny), 251

California, southern, recognition of faults in: studies for students (W. J. Miller), 87

Calkins, F. C. Cited on age of lower Keechelus, Washington (W. C. Warren), 810
Cited on Snoqualmie quadrangle, Washington (W. C. Warren), 798

Camagüey Province, Cuba (R. H. Palmer), 772

Camelops kansanus Leidy in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 275

Campbell, C. D. Cited on alkaline rocks of Kruger Mountain, Washington (K. B. Krauskopf), 23
Cited on Similkameen batholith, Washington (K. B. Krauskopf), 21

Campbell, M. R. Cited on Chambersburg-Hanover section of Appalachian erosion surfaces (W. S. Cole), 139

Cañada Mariana surface, San Acacia area, New Mexico (C. S. Denny), 245

Cape Neddick, Maine, contaminated complex dike at (J. C. Haff), 835

Carbonitization of syenite, Night Hawk Peninsular Mine, Ontario (A. R. Byers), 283

Cascade glaciers, probable early Vashon extension of (J. Hoover Mackin), 471
small size of, at maximum stand of Puget Glacier (J. Hoover Mackin), 470

Case, E. C. Cited on family Trematopsidae in Texas redbeds (E. C. Olson), 150

Cause of relation of Mississippi River to Ozark topographic dome (R. F. Flint), 628

Cavities, subriver solution, in the Tennessee Valley (B. C. Moneymaker), 74

Cedar spillway, origin of, Washington (J. Hoover Mackin), 465

Central Texas granites, evolution of the (S. S. Goldich), 697

Chadwick, G. H. Cited on age of Appalachian erosion surfaces (W. S. Cole), 147
Chamberlin, Rollin T. Review of Earthquakes and other earth movements. By John Milne, 224
Review of Strength and structure of the earth. By Reginald A. Daly, 443
Review of Survey of North Greenland. By Lauge Koch, 779
and T. C. Cited on certain phases of glacial erosion (C. A. Cotton), 127
Chamberlin, T. C. and R. T. Cited on certain phases of glacial erosion (C. A. Cotton), 127
Chambersburg-Hanover section of Appalachian erosion surfaces (W. S. Cole), 139
Channels as a cause of rip currents, southern California (F. P. Shepard *et al.*), 362
and fill removal, Washington (I. S. Allison), 55
in underlying sand along path of rip currents, southern California (F. P. Shepard *et al.*), 350
Chapman, Carleton A. *The tectonic significance of some pegmatites in New Hampshire*, 370
Cited on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 184
Character of feeder channels in path of rip currents, southern California (F. P. Shepard *et al.*), 352
of ore solutions, Night Hawk Peninsular Mine, Ontario (A. R. Byers), 289
Chemical analyses of ore bodies, Night Hawk Peninsular Mine, Ontario (A. R. Byers), 287
analyses of the textural varieties of granite in the "Buchanan massif" (S. S. Goldich), 703
analysis of central Texas granites (S. S. Goldich), 710
composition of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 663
data in correlation of intrusive rocks (K. B. Krauskopf), 35
weathering, an agent in—acid clay (E. R. Graham), 392
Chloritization, Night Hawk Peninsular Mine, Ontario (A. R. Byers), 285
Cirques, convergent, and the trough end (C. A. Cotton), 123
Classification of intrusion, Cape Neddick, Maine (J. C. Haff), 839
Clastic crevice fillings in the Keweenawan lavas (W. C. Fackler), 550
Clay, acid—an agent in chemical weathering (E. R. Graham), 392
acid, nature of (E. R. Graham), 394
Clements Glacier, Montana (J. L. Dyson), 823
Climate of San Acacia area, New Mexico (C. S. Denny), 234
Climatic implications in formation of Daemonelix (A. L. Lugn), 695
Cloos, Ernst. Cited on Loon Lake pluton, Ontario (T. T. Quirke and W. C. Lacy), 606
Coal: its properties, analysis, classification, geology, extraction, uses, and distribution. By E. S. Moore. Review by D. J. Fisher, 864
Coaly sediment, metasomatism of a, into an igneous-appearing rock (G. E. Goodspeed, R. E. Fuller, and H. A. Coombs), 190
Cole, W. Storrs. *Nomenclature and correlation of Appalachian erosion surfaces*, 129
Colluvium in Mount Aix quadrangle, Washington (W. C. Warren), 808
Color of Trabuco and Baker conglomerates, California (W. P. Popenoe), 745
Colorado, metamorphism of a roof pendant of the Idaho Springs formation, Front Range (McClelland Dings), 825
Colville granodiorite, Washington (K. B. Krauskopf), 8
Comments on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 177
Comparability of ground-water flow through limestone (R. Rhoades and M. N. Sinacori), 787
Complex, contaminated, dike at Cape Neddick, Maine (J. C. Haff), 835
Complexity of mineral suite with decreasing geologic age (F. J. Pettijohn), 620
Composition of Trabuco and Baker conglomerates, California (W. P. Popenoe), 746
The concept of the graded river (J. E. Kesseli), 561

Conglomerates, the Trabuco and Baker, of the Santa Ana Mountains (W. P. Popenoe), 738

Consolidation of Trabuco and Baker conglomerates, California (W. P. Popenoe), 745

Constrictions, preglacial, hypothesis of (C. A. Cotton), 117

Constructional forms of Scabland deposits, Washington (I. S. Allison), 66

Contact features, contaminated complex dikes, Cape Neddick, Maine (J. C. Haff), 838

Contaminated complex dike at Cape Neddick, Maine (J. C. Haff), 835

Contamination in composite minor intrusions, features suggestive of (J. C. Haff), 847

Contour and geologic maps of Appalachian erosion surfaces, comparison of (W. S. Cole), 146

Convergent cirques and the trough-end (C. A. Cotton), 123

Cook, Kenneth L. Review of Geophysical prospecting for oil. By L. L. Nettleton, 335

Cooke, C. Wythe. Scenery of Florida interpreted by a geologist. Review by L. B. Freeman, 670

Coombs, Howard A., G. E. Goodspeed, and Richard E. Fuller. *Metasomatism of a coaly sediment into an igneous-appearing rock*, 190

and G. E. Goodspeed. Cited on breccias in Keechelus, Washington (W. C. Warren), 800

Cope, E. D. Cited on family Trematopsidae in Texas redbeds (E. C. Olson), 151

Cited on fauna of Equus beds, Kansas (J. C. Frye and C. W. Hibbard), 273

Cited on McPherson sloth skull, Kansas (J. C. Frye and C. W. Hibbard), 272

Correlation of intrusive rocks, criteria for (K. B. Krauskopf), 34

of intrusive rocks of Okanogan Valley, Washington (K. B. Krauskopf), 31

nomenclature and, of Appalachian erosion surfaces (W. S. Cole), 129

Correlations among Okanogan intrusives, Washington (K. B. Krauskopf), 50

Cotton, C. A. *The longitudinal profiles of glaciated valleys*, 113

Cotylosauria near Seymour, Texas (E. C. Olson), 762

Crest lines, evenness of, Monterey, Staunton, and Harrisonburg quadrangles, Virginia–West Virginia (H. D. Thompson), 539

Crevice fillings, clastic, in the Keweenawan lavas (W. C. Fackler), 550

Criteria, classification of, for correlation of intrusive rocks (K. B. Krauskopf), 49

for correlating intrusive rocks (K. B. Krauskopf), 34

for determining rip currents, southern California (F. P. Shepard *et al.*), 340

for an igneous origin of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 664

for location of faults in southern California (W. J. Miller), 89

Croneis, Carey. Review of Textbook of geology, Part II: Historical geology. By Charles Schuchert and Carl O. Dunbar, 776

Cross section of flows showing relations of crevice fillings to amygdaloid conglomerate (W. C. Fackler), 554

Crystal drawing (D. J. Fisher), 442

Crystalline rocks, measuring grain boundaries in (G. W. Bain), 199

Crystallization history of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 665

Crystallography (D. J. Fisher), 319

Cuestas and lowlands, Ozark topographic dome (R. F. Flint), 634

Currents, relation of rip currents to, southern California (F. P. Shepard *et al.*), 358

rip: a process of geological importance (F. P. Shepard, K. O. Emery, and E. C. La Fond), 337

Curves, altimetric, of summits, Appalachian Mountains (H. D. Thompson), 525

Cut-and-fill terraces, San Acacia area, New Mexico (C. S. Denny), 245

Cyclic significance of summits, Appalachian Mountains (H. D. Thompson), 524

Cyclographic projection (D. J. Fisher), 315, 316

Dacitic rock, igneous-appearing, in western Washington (G. E. Goodspeed, R. E. Fuller, and H. A. Coombs), 195

Daemonelix, the origin of (A. L. Lugn), 673
structures (A. L. Lugn), 674

Daly, Reginald A. Strength and structure of the earth. Review by R. T. Chamberlin, 443
Cited on alkaline rocks of Kruger Mountain, Washington (K. B. Krauskopf), 23
Cited on geology of North American Cordillera at forty-ninth parallel (J. D. Barksdale), 728
Cited on Similkameen batholith, Washington (K. B. Krauskopf), 21

Darcy's law (M. K. Hubbert), 327
(H. Krutter), 324

Darton, N. H. Cited on geology and water resources of Nebraska (A. L. Lugn), 680

Dates on peneplanation and uplift of Ozark topographic dome (R. F. Flint), 639

Daubrée, A. Cited on application of tumbling-barrel to geological problems (W. C. Krumbein), 483

Daugherty, L. H., and H. R. Stagner. The upper Triassic flora of Arizona. Review by E. P. Du Bois, 671

Dausse, M. Cited on work of rivers and torrents (J. E. Kesseli), 565

Davis, William Morris. Cited on the concept of the graded river (J. E. Kesseli), 562, 563
Cited on the geographical cycle (J. E. Kesseli), 571
Cited on origin of limestone caverns (R. Rhoades and M. N. Sinacori), 786
Cited on violent undertow theory (M. K. Shepard *et al.*), 338

Deep-zone dome and basin structures (T. T. Quirke and W. C. Lacy), 589

Deer, W. A., and L. R. Wager. Geological investigations in East Greenland, Part III: The petrology of the Skaergaard intrusion, Kangerdlugssuaq, East Greenland. Review by L. B. Freeman, 670

De Geer, Gerard. Geochronologia Suecia principles. Review by Paul MacClintock, 557

Deglaciation, final stage of, Snoqualmie-Cedar area, Washington (J. Hoover Mackin), 477
of Snoqualmie embayment, Washington (J. Hoover Mackin), 474

De Martonne, E. Cited on preglacial constrictions (C. A. Cotton), 117, 118
Cited on trough forms (C. A. Cotton), 114, 116

Denny, Charles S. *Quaternary geology of the San Acacia area, New Mexico*, 225

Description, general, of rip currents, southern California (F. P. Shepard, *et al.*), 340
of gullies, Lassen Peak (C. R. Swartzlow), 402
of landslide, Zanesville, Ohio (R. H. Mitchell), 383

Devils Canyon, Washington (I. S. Allison), 56

"Devil's Corkscrews" (A. L. Lugn), 674

Diabase in contaminated complex dike, Cape Neddick, Maine (J. C. Haff), 840

Dictyonitic structures, Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 600

Dihedral angle (D. J. Fisher), 426

Dike, contaminated complex, at Cape Neddick, Maine (J. C. Haff), 835

Dings, McClelland. *Metamorphism of a roof pendant of the Idaho Springs formation, Front Range, Colorado*, 825

Discussion: The theory of ground-water motion (H. Krutter), 324

Dislocated old erosion surfaces as criterion for location of faults in southern California (W. J. Miller), 90
strata as criterion for location of faults in southern California (W. J. Miller), 90
volcanic rocks as criterion for location of faults in southern California (W. J. Miller), 91

Distance problem (D. J. Fisher), 305

District, western San Augustin plains, New Mexico, volcanic rocks of the (W. E. Powers), 207

Disturbed strata adjacent to scarps as criterion for location of faults in southern California (W. J. Miller), 96

Dobson, G. C., S. C. Happ, and G. Rittenhouse. Some principles of accelerated stream and valley sedimentation. Review by C. W. Sternberg, 334

Doctorates, American, in geology, 1931–40 (Louis L. Ray), 854
Dome and basin variety of folding, Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 604
deep-zone, and basin structures (T. T. Quirke and W. C. Lacy), 589
Douglas fault, Pine County, Minnesota, geophysical study of the (G. I. Welch), 408
Downmelting from morainal embankments, Snoqualmie embayment, Washington (J. Hoover Mackin), 474
Drag folding, Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 600
Drainage of Monterey, Staunton, and Harrisonburg quadrangles, Virginia–West Virginia (H. D. Thompson), 546
in San Acacia area, New Mexico (C. S. Denny), 234
Dry St. Vrain region, Colorado (McClelland Dings), 825
Du Bois, E. P. Review of The Upper Triassic flora of Arizona. By L. H. Daugherty and H. R. Stagner, 671
Dunbar, Carl O., and Charles Schuchert. Textbook of geology, Part II; Historical geology. Review by Carey Croneis, 776
Dyson, James L. *Recent glacier recession in Glacier National Park, Montana*, 815

Earl Mountain, Washington (K. B. Krauskopf), 28
Earthquakes and other earth movements. By John Milne. Review by R. T. Chamberlin, 224
Effect of currents and waves in formation of rip currents, southern California (F. P. Shepard *et al.*), 363
Effects of abrasion on the size, shape, and roundness of rock fragments, the (W. C. Krumbein), 482
Elephas boreus Hay in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 274
primigenius, McPherson County, Kansas (J. C. Frye and C. W. Hibbard), 273
Elias, M. K. Cited on similarity of Daemonelix structures to lianas (A. L. Lugn), 685
Ellensburg formation, Washington (W. C. Warren), 805
Embankment materials, lithology of, Washington (J. Hoover Mackin), 453
Emery, K. O. *et al. Rip currents: a process of geological importance*, 337
Emma Creek formation, Kansas (J. C. Frye and C. W. Hibbard), 264, 276
relation of, to younger formations (J. C. Frye and C. W. Hibbard), 270
Encroachment, extent of, upon xenoliths by granophyre, Cape Neddick, Maine (J. C. Haff), 844
Eothyrididae near Seymour, Texas (E. C. Olson), 753
Epidote in Okanogan Valley, Washington (K. B. Krauskopf), 44
Equilibrium in rivers, origin of the notion of balance or (J. E. Kesseli), 565
Equus complicatus Leidy in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 275
leidyi Hay in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 275
major, McPherson County, Kansas (J. C. Frye and C. W. Hibbard), 272
niobrarensis Hay in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 275
(*Plesippus*) cf. *simplicidens* Cope in Emma Creek formation, Kansas (J. C. Frye and C. W. Hibbard), 277
Erosion surfaces, age of, Appalachian plateaus (W. S. Cole), 146
Appalachian, nomenclature and correlation of (W. S. Cole), 129
of northern Appalachian plateaus (W. S. Cole), 130
Erosional problems in Scabland, Washington (I. S. Allison), 55
Estimating contact length in crystalline rocks (G. W. Bain), 202
Euthygraphic projection (D. J. Fisher), 313
Evaluation of various concepts of the graded river (J. E. Kesseli), 572
Evans, O. F. Cited on undertow under conditions of onshore wind (F. P. Shepard, *et al.*), 339
Evidence of extent of Methow ice during late glacial maximum, Washington (J. D. Barksdale), 723

of graded conditions in a river (J. E. Kesseli), 563
of a late glacial substage, Methow Valley, Washington (J. D. Barksdale), 731
Evolution of the central Texas granites (S. S. Goldich), 697
Examination of fragmental rocks, the. By Frederick G. Tickell. Review by George H. Otto, 780
Experimental procedure in study of the effect of acid clay in chemical weathering (E. R. Graham), 397
results in chemical weathering (E. R. Graham), 398
Explanation of landslide, Zanesville, Ohio (R. H. Mitchell), 389

Fackler, W. C. *Clastic crevice fillings in the Keweenawan lavas*, 550
Failure of Cedar reservoir, Washington (J. Hoover Mackin), 468
Family Trematopsidae, the (E. C. Olson), 149
Fault crush-zones as criterion for location of faults in southern California (W. J. Miller), 92
Douglas, Pine County, Minnesota, geophysical study of the (G. I. Welch), 408
structures on Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 597
surfaces as criterion for location of faults in southern California (W. J. Miller), 89
Faults, criteria for location of, in southern California (W. J. Miller), 89
recognition of, in southern California: studies for students (W. J. Miller), 87
Features suggestive of reaction and contamination in composite minor intrusions (J. C. Haff), 847
topographic, of San Acacia area, New Mexico (C. S. Denny), 231
Feldspar variation in suite of rocks, Red Lake area, Ontario (W. K. Gummer), 648
Fenneman, N. M. Cited on erosion surfaces (W. S. Cole), 131
Fields of specialization of doctorates in geology (Louis L. Ray), 859
Fifes Peak andesite in Mount Aix quadrangle, Washington (W. C. Warren), 800
Filled cavities, Tennessee Valley (B. C. Moneymaker), 85
Filled-fissure pegmatites, New Hampshire (C. A. Chapman), 374
Fillings, clastic crevice, in the Keweenawan lavas (W. C. Fackler), 550
Fisher, D. Jerome. *Studies for students: a new projection protractor.* I, 292; II, 419
Review of Coal: its properties, analysis, classification, geology, extraction, uses, and distribution. By E. S. Moore, 864
Flat-floored valleys bounded by high scarps as criterion for location of faults in southern California (W. J. Miller), 95
Flat tops in Monterey, Staunton, and Harrisonburg quadrangles, Virginia–West Virginia (H. D. Thompson), 542
Flint, Richard Foster. *Ozark segment of Mississippi River*, 626
Cited on hypothesis of origin of Scabland (I. S. Allison), 54
Cited on Pleistocene drift border in eastern Washington (J. D. Barksdale), 723
Flint's fill hypothesis of origin of Scabland (I. S. Allison), 54
Flintstone-Williamsport section of Appalachian erosion surfaces (W. S. Cole), 137
Floods and the graded stream (J. E. Kesseli), 580
Flow, ground-water, and solution, pattern of (R. Rhoades and M. N. Sinacori), 785
Foam belts as criteria for determining rip currents, southern California (F. P. Shepard *et al.*), 341
Folds on Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 603
Formation, Idaho Springs, Front Range, Colorado, metamorphism of a roof pendant of the (McClelland Dings), 825
a new Middle and Upper Pliocene, of south-central Kansas, stratigraphy and paleontology of (J. C. Frye and C. W. Hibbard), 261
Formational contact phenomena, Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 600
Fractionation of granitic liquid (S. S. Goldich), 713

Fragments, rock, the effects of abrasion on the size, shape, and roundness of (W. C. Krumbein), 482

Franz Josef Glacier, New Zealand (C. A. Cotton), 124

Freeman, Louise Barton. Review of Geological investigations in East Greenland, Part III: The petrology of the Skaergaard intrusion, Kangerdlugssuaq, East Greenland. By L. R. Wager and W. A. Deer, 670

Review of Relation of thickness of Mississippian limestones in central and eastern Kansas to oil and gas deposits. By Wallace Lee, 560

Review of Scenery of Florida interpreted by a geologist. By C. Wythe Cooke, 670

Freeman, Otis W. *The recession of Lyman Glacier, Washington*, 764

Frey, M. G. Cited on location of fault plane, Pine County, Minnesota (G. I. Welch), 408

Fridley, H. M., and J. P. Nölting, Jr. Cited on peneplains of Appalachian Plateau (W. S. Cole), 137

Front Range, Colorado, metamorphism of a roof pendant of the Idaho Springs formation (McClelland Dings), 825

Frye, John C., and Claude W. Hibbard. *Stratigraphy and paleontology of a new Middle and Upper Pliocene formation of south-central Kansas*, 261

Fuchsitization, Night Hawk Peninsular Mine, Ontario (A. R. Byers), 284

Full load in rivers, improbability of a (J. E. Kesseli), 581

Fuller, Richard E., G. E. Goodspeed, and Howard A. Coombs. *Metasomatism of a coaly sediment into an igneous-appearing rock*, 190

Gap in advancing breakers as criterion for determining rip currents (F. P. Shepard *et al.*), 341

Geochronologia Suecia principles. By Gerard De Geer. Review by Paul MacClintock, 557

Geologic age, persistence of heavy minerals and (F. J. Pettijohn), 610

and contour maps of Appalachian erosion surfaces, comparison of (W. S. Cole), 146

features of clastic crevice fillings, Keweenawan lavas of Lake Superior region (W. C. Fackler), 552

features of Trabuco and Baker conglomerates, California (W. P. Popenoe), 744

history of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 664

history of south-central Kansas (J. C. Frye and C. W. Hibbard), 268

relations, contaminated complex dike, Cape Neddick, Maine (J. C. Haff), 835

Geological applications of the abrasion theory (W. C. Krumbein), 510

importance, a process of: rip currents (F. P. Shepard, K. O. Emery, and E. C. La Fond), 337

investigations in East Greenland, Part III: The petrology of the Skaergaard intrusion, Kangerdlugssuaq, East Greenland. By L. R. Wager and W. A. Deer. Review by L. B. Freeman, 670

relations in New Hampshire (C. A. Chapman), 370

relations of rock units, Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 591

Geology along the southern margin of the Absaroka range: a reply (J. D. Love), 101

American doctorates in, 1931–40 (Louis L. Ray), 854

of the Chicago region. By J Harlen Bretz. Review by George M. Stanley, 446

of China. By J. S. Lee. Review by Bailey Willis, 218

of coal. By Otto Stutzer. Review by Thomas A. Hendricks, 669

of the deposit, Night Hawk Peninsular Mine, Ontario (A. R. Byers), 279

glacial, of the Snoqualmie-Cedar area, Washington (J. Hoover Mackin), 449

national introspection in (W. G. Woolnough), 414

quaternary, of the San Acacia area, New Mexico (C. S. Denny), 225

of San Acacia area, New Mexico (C. S. Denny), 231

Geomorphic influence of faulting in southern California (W. J. Miller), 97

Geophysical prospecting for oil. By L. L. Nettleton. Review by Kenneth L. Cook, 335

study of the Douglas fault, Pine County, Minnesota (G. I. Welch), 408
Giant granites, Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 602
Gilbert, G. K. Cited on stream work (J. E. Kesseli), 569
Gillson, J. L. Cited on contact metamorphism (G. M. Schwartz and J. H. Todd), 187
Glacial erosion, headward, hypothesis of (C. A. Cotton), 127
geology of the Snoqualmie-Cedar area, Washington (J. Hoover Mackin), 449
Glaciated valleys, the longitudinal profiles of (C. A. Cotton), 113
Glaciation of the Methow Valley, Washington (J. D. Barksdale), 721
Glacier at Iceberg Lake, Montana (J. L. Dyson), 822
Lyman, Washington, the recession of (O. W. Freeman), 764
National Park, Montana, recent glacier recession in (J. L. Dyson), 815
recession, recent, in Glacier National Park, Montana (J. L. Dyson), 815
Gneiss, banded, in Washington (K. B. Krauskopf), 9
porphyritic, in Washington (K. B. Krauskopf), 9
a pre-Cambrian, from the San Rafael swell, Utah (R. A. Hatch), 657
swirled, in Washington (K. B. Krauskopf), 9
Gnomonic degrees (D. J. Fisher), 303
face pole (D. J. Fisher), 317
lower pole (D. J. Fisher), 317
pole (D. J. Fisher), 317, 318
projection (D. J. Fisher), 302
scale (D. J. Fisher), 294, 296
solution (D. J. Fisher), 311
Gnomonogram (D. J. Fisher), 312, 424
Gnomonostereogram (D. J. Fisher), 443
Goldich, Samuel S. *Evolution of the central Texas granites*, 697
Cited on process of decomposition (E. R. Graham), 392
Cited on "stability" series of minerals (F. J. Pettijohn), 618
Goldschmidt, V. M. Cited on contact metamorphism (G. M. Schwartz and J. H. Todd), 186
Goodspeed, G. E., Richard E. Fuller, and Howard A. Coombs. *Metasomatism of a coaly sediment into an igneous-appearing rock*, 190
and H. A. Coombs. Cited on breccias in lower part of Keechelus, Washington (W. C. Warren), 800
Graded conditions in a river, evidence of (J. E. Kesseli), 563
river, the concept of the (J. E. Kesseli), 561
stream, the, and floods (J. E. Kesseli), 580
Graham, E. R. *Acid clay—an agent in chemical weathering*, 392
Grain boundaries in crystalline rocks, measuring (G. W. Bain), 199
count in crystalline rocks (G. W. Bain), 202
Gran Chaco region, South America (A. L. Lugn), 690
Granger, Walter, and W. J. Sinclair. Cited on Wind River and Bighorn basins (J. D. Love), 103
Granite-aplite-pegmatite relationships in central Texas (S. S. Goldich), 715
batholith, border rocks of a, Red Lake, Ontario (W. K. Gummer), 641
of Granite Mountain, central Texas (S. S. Goldich), 703
injection gneiss, Front Range, Colorado (McClelland Dings), 828
of Petrick quarry in central Texas (S. S. Goldich), 702
of Red Lake area, Ontario (W. K. Gummer), 646
Silver Plume, in Front Range, Colorado (McClelland Dings), 828
of Town Mountain in central Texas (S. S. Goldich), 701
Granites, central Texas, evolution of the (S. S. Goldich), 697
Granodiorite of Whisky Mountain, Washington (K. B. Krauskopf), 5
Granophyre in contaminated complex dike, Cape Neddick, Maine (J. C. Haff), 843
Gravity-meter survey, Douglas fault, Pine County, Minnesota (G. I. Welch), 410
Green water as criterion for determining rip currents, southern California (F. P. Shepard *et al.*), 341
Grinnell Glacier, Montana (J. L. Dyson), 816
Ground-water circulation, relation of, to bedrock solution (R. Rhoades and M. N. Sinacori), 791
flow, paths of (R. Rhoades and M. N. Sinacori), 787

flow and solution, pattern of (R. Rhoades and N. M. Sinacori), 785
motion, the theory of: discussion (H. Krutter), 324
motion, the theory of: a reply (M. K. Hubbert), 327

Grout, F. F. Cited on beds of tuff in Lake Superior region (W. C. Fackler), 553

Groves, A. W. Cited on granites of Channel Islands (K. B. Krauskopf), 33

Gullies, description of, Lassen Peak (C. R. Swartzlow), 402
parallel, on the slopes of Lassen Peak (C. R. Swartzlow), 402

Gummer, W. K. *Border rocks of a granite batholith, Red Lake, Ontario*, 641

Haas, William H. (ed.). The American empire. Review by C. W. Sternberg, 672

Haff, John C. *Contaminated complex dike at Cape Neddick, Maine*, 835

Hanover-Harrisburg section of Appalachian erosion surfaces (W. S. Cole), 140

Happ, S. C. Cited on Monticello erosion level of Appalachian plateau (W. S. Cole), 143
G. Rittenhouse, and G. C. Dobson. Some principles of accelerated stream and valley sedimentation. Review by C. W. Sternberg, 334

Harker, A. Cited on metamorphism (McClelland Dings), 833
Cited on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 178, 185
Cited on sericitization (G. M. Schwartz and J. H. Todd), 181

Harrison ecology (A. L. Lugn), 694
sedimentation (A. L. Lugn), 688

Harrisonburg, the Monterey, Staunton, and, quadrangles, topographic analysis of (H. D. Thompson), 521

Harwood, H. F., and A. Brammall. Cited on granitic types at Dartmoor, England (K. B. Krauskopf), 32

Hatch, Robert A. *A pre-Cambrian gneiss from the San Rafael swell, Utah*, 657

Haworth, Erasmus, and J. W. Beede. Cited on "McPherson Equus Beds," Kansas (J. C. Frye and C. W. Hibbard), 263, 266

Hazleton-Delaware Watergap section of [illegible]palachian erosion surfaces (W. [illegible]ole), 140

I[illegible] glacial erosion, hypothesis of [illegible]otton), 127

J[illegible] *persistence of, and geologic* [illegible] J. Pettijohn), 610

J[illegible]ricks, Thomas A. Review of Geology of coal. By Otto Stutzer, 669

F[illegible]aw, Paul C. *et al.* Studies of Cenozoic vertebrates and stratigraphy of western North America. Review by C. W. Sternberg, 447

Hibbard, Claude W., and John C. Frye. *Stratigraphy and paleontology of a new Middle and Upper Pliocene formation of south-central Kansas*, 261

Historical review of Trabuco and Baker conglomerates, California (W. P. Popenoe), 739

Hite, M. P. Cited on piling-up of water along shore, southern California (F. P. Shepard *et al.*), 361

Hoffman, M. G. Cited on Columbia River lavas (W. C. Fackler), 555

Homophanous granodiorite, zone of, in Washington (K. B. Krauskopf), 8

Horizontal dislocations as criterion for location of faults in southern California (W. J. Miller), 92

Hornblende-plagioclase gneiss, Front Range, Colorado (McClelland Dings), 829

Hubbert, M. King. *The theory of ground-water-motion: a reply*, 327

Hughes, H. H. (compiler). Minerals yearbook 1940, review of 1939. Review by C. W. Sternberg, 336

Hutton, C. Osborne. Metamorphism in the Lake Wakatipu region, western Otago, New Zealand. Review by C. W. Sternberg, 335

Hydrolitic action by adsorbed hydrogen of colloidal clay on calcium feldspar (E. R. Graham), 400

Hylander, C. J. Cited on Strangler fig (A. L. Lugn), 687

Hypotheses of consequent, subsequent, and superposed origin of Ozark segment of Mississippi River (R. F. Flint), 628

Hypothesis of antecedent stream in Ozark segment of Mississippi River (R. F. Flint), 633

Flint's fill, of origin of Scabland (I. S. Allison), 54
of an ice-margin stream in Ozark segment of Mississippi River (R. F. Flint), 630

Hypsographic curves of Monterey, Staunton, and Harrisonburg quadrangles, Virginia–West Virginia (H. D. Thompson), 543

"Iceberg Glacier," Montana (J. L. Dyson), 823
Iceberg Lake, Montana (J. L. Dyson), 822
Idaho Springs formation, Colorado (McClelland Dings), 825
Front Range, Colorado, metamorphism of a roof pendant of the (McClelland Dings), 825
Iddings, J. P. Cited on petrography of granite porphyry in central Texas (S. S. Goldich), 707
Igneous-appearing rock, an, metasomatism of a coaly sediment into (G. E. Goodspeed, R. E. Fuller, and H. A. Coombs), 190
Importance, geological, a process of: rip currents (F. P. Shepard, K. O. Emery, and E. C. La Fond), 337
Improbability of a full load in rivers (J. E. Kesseli), 581
Inadequacy of undertow, southern California (F. P. Shepard *et al.*), 361
Inclusions and adjacent matrix rock, Red Lake area, Ontario (W. K. Gummer), 645
Indentations, relation of rip currents to, southern California (F. P. Shepard *et al.*), 343
Index map, Monterey, Staunton, and Harrisonburg quadrangles (H. D. Thompson), 521
Influence of lithology and structure on San Acacia area, New Mexico (C. S. Denny), 232
Intergranular space in crystalline rocks (G. W. Bain), 205
Internal constitution of Snoqualmie-Cedar embankments, Washington (J. Hoover Mackin), 466
Introspection, national, in geology (W. G. Woolnough), 414
Intrusive rocks of the Okanogan Valley and the problem of their correlation (K. B. Krauskopf), 1
Intrusives of Okanogan Valley, Washington, description of (K. B. Krauskopf), 5
Isometric lines (D. J. Fisher), 435

Jackson Glacier, Montana (J. L. Dyson), 819
Johnson, Douglas. The origin of submarine canyons: a critical review of hypotheses. Review by John L. Rich, 107
Johnson, Willard D. Cited on headward glacial erosion (C. A. Cotton), 127, 128
Jones, A. E. Cited on recent flows of Mt. Lassen and Hawaiian Islands (W. C. Fackler), 556

Kansas, south-central, stratigraphy and paleontology of a new Middle and Upper Pliocene formation of (J. C. Frye and C. W. Hibbard), 261
Keechelus andesitic series, relation of the Yakima basalt to the (W. C. Warren), 795
Keppel, David. Cited on granites of Llano-Burnet region, Texas (S. S. Goldich), 701
Kesseli, John E. *The concept of the graded river*, 561
Keweenawan lavas, clastic crevice fillings in (W. C. Fackler), 550
Kieslinger, A. Cited on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 182
Kittatinny-Schooley problem of Appalachian erosion surfaces (W. S. Cole), 132
Knopf, E. B. Cited on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 182
Koch, Lauge. Survey of North Greenland. Review by R. T. Chamberlin, 779
Krauskopf, K. B. *Intrusive rocks of the Okanogan Valley and the problem of their correlation*, 1
Kruger Mountain, Washington (K. B. Krauskopf), 23
Krumbein, W. C. *The effects of abrasion on the size, shape, and roundness of rock fragments*, 482
Review of Sedimentary petrography. By Henry B. Milner, 332

Krutter, H. *Discussion: The theory of ground-water motion*, 324
Krynine, Paul D. Petrology and genesis of the Third Bradford Sand. Review by F. J. Pettijohn, 448

Labyrinthodontia near Seymour, Texas (E. C. Olson), 762
of Texas redbeds (E. C. Olson), 149
Lacy, W. C., and T. T. Quirke. *Deep-zone dome and basin structures*, 589
La Fond, E. C. *et al. Rip currents: a process of geological importance*, 337
La Jolla, California (F. P. Shepard *et al.*), 342
Lake, Night Hawk, Ontario, wall-rock alteration at Night Hawk Peninsular Mine (A. R. Byers), 279
Landes, Kenneth K., and Oren R. Bingham. Resource-Full Kansas. Review by C. W. Sternberg, 448
Landslide, explanation of, Zanesville, Ohio (R. H. Mitchell), 389
an unusual (R. H. Mitchell), 382
Lassen Peak, activity of (C. R. Swartzlow), 405
parallel gullies on the slopes of (C. R. Swartzlow), 402
Late Devonian age of uraninite from one of pegmatites in Little schist, New Hampshire (C. A. Chapman), 381
Lavas, clastic crevice fillings in the Keweenawan (W. C. Fackler), 550
Lee, J. S. The geology of China. Review by Bailey Willis, 218
Lee, Wallace. Relation of thickness of Mississippian limestones in central and eastern Kansas to oil and gas deposits. Review by Louise Barton Freeman, 560
Length of contact, use of, in crystalline rocks (G. W. Bain), 203
Le Vene, Clara Mae, and Charles Schuchert. O. C. Marsh, pioneer in paleontology. Review by A. S. Romer, 221
Lewis, W. V. Cited on the glaciated hills of Skye, Switzerland (C. A. Cotton), 121
Lianas similar to Daemonelix structure (A. L. Lugn), 685
Lime-silicate rock, Front Range, Colorado (McClelland Dings), 830
Lindahl, J. Cited on Equus beds of Kansas (J. C. Frye and C. W. Hibbard), 272
Lithology of embankment materials, Washington (J. Hoover Mackin), 453
Llanite (granite porphyry) in central Texas (S. S. Goldich), 706
Llano uplift, Texas (S. S. Goldich), 697
Location of faults in southern California (W. J. Miller), 89
Lohman, S. W., and J. C. Frye. Cited on Emma Creek and McPherson formations, Kansas (J. C. Frye and C. W. Hibbard), 264
The longitudinal profiles of glaciated valleys (C. A. Cotton), 113
Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 590
Love, John David. *Geology along the southern margin of the Absaroka range: a reply*, 101
Lower Rio Puerco, piracy of, New Mexico (C. S. Denny), 239
Lugn, A. L. *The origin of Daemonelix*, 673
Lymàn Glacier, Washington, the recession of (O. W. Freeman), 764

MacClintock, Paul. Review of Geochronologia Suecia principles. By Gerard De Geer, 557
Mackin, J. Hoover. *Glacial geology of the Snoqualmie-Cedar area, Washington*, 449
McPherson Equus beds, Kansas (J. C. Frye and C. W. Hibbard), 263
formation, Kansas (J. C. Frye and C. W. Hibbard), 273
Magnetic survey, Douglas fault, Pine County, Minnesota (G. I. Welch), 408
Maine, contaminated complex dike at Cape Neddick (J. C. Haff), 835
Malignite near Oroville, Washington (K. B. Krauskopf), 25
The mammalian fauna of the White River Oligocene. By William B. Scott and Glenn L. Jepsen. Part III: *Lagomorpha*. By Albert E. Wood. Part IV: *Artiodactyla*. By William B. Scott. Review by E. C. Olson, 331
Map, areal geologic, of Appalachian erosion surfaces (W. S. Cole), 144
areal geology of part of Mount Aix quadrangle, Washington (W. C. Warren), 797

of Cedar embankment, Washington (J. Hoover Mackin), 456
of central Texas (S. S. Goldich), 698
contour, of Appalachian erosion surfaces (W. S. Cole), 145
geologic, of the Dry St. Vrain region, Colorado (McClelland Dings), 827
geologic, of Tennessee Valley area (B. C. Moneymaker), 77
geologic sketch, of the Okanogan Valley, Washington (K. B. Krauskopf), 3
geomorphic, of San Acacia area, New Mexico (C. S. Denny), 228, 229
hypothetical, to show possible origin of Rio Puerco (C. S. Denny), 243
index, of Appalachian erosion surfaces (W. S. Cole), 136
index, of San Acacia area, New Mexico (C. S. Denny), 231
index, showing Keweenawan lavas, Lake Superior (W. C. Fackler), 551
index, showing topographic quadrangles in Ozark segment of Mississippi River (R. F. Flint), 629
index, of Washington showing Mount Aix, Snoqualmie, Mount Stuart, and Ellensburg quadrangles (W. C. Warren), 796
of Kansas showing location of new Middle and Upper Pliocene formation (J. C. Frye and C. W. Hibbard), 263
location, showing drainage area of Methow River, Washington (J. D. Barksdale), 722
location, showing relation of upper Methow tributaries to those of Pasayten, Washington (J. D. Barksdale), 726
of Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 592, 593, 594
outline, of Tennessee River system (B. C. Moneymaker), 78
reference, of lower Snake River area, Washington (I. S. Allison), 59
of region near Pine County, Minnesota (G. I. Welch), 409
of the San Augustin plains region, New Mexico (W. E. Powers), 208
showing area near Scripps Institution, California (F. P. Shepard *et. al.*), 338
showing Burleigh, Anstruther, Monmouth, and Deer Lake batholiths, Ontario (T. T. Quirke and W. C. Lacy), 606
showing location of Romano syncline, Cuba (R. H. Palmer), 773
showing maximum stand of Vashon Puget Glacier, Washington (J. Hoover Mackin), 459
showing origin of Snoqualmie Falls, Washington (J. Hoover Mackin), 478
showing recessional stand or readvance of Puget Glacier, Washington (J. Hoover Mackin), 476
sketch, of Lassen Peak, showing location of gullies (C. R. Swartzlow), 403
sketch, of parts of Orange and Riverside counties, California (W. P. Popenoe), 741
sketch, showing Mississippi River channel and trench (R. F. Flint), 631
sketch, showing outline of Mackenzie Island batholith, Ontario (W. K. Gummer), 642
sketch, showing structure contours on top of Yakima basalt, Washington (W. C. Warren), 803
topographic, of part of Methow quadrangle, Washington (J. D. Barksdale), 733
topographic, of part of Stehekin quadrangle, Washington (O. W. Freeman), 765
topographic, of Snoqualmie-Cedar area, Washington (J. Hoover Mackin), 452
topographic, of Socorro County, New Mexico (C. S. Denny), 227

Maps, sketch, showing decrease in area of glaciers in Glacier National Park, Montana (J. L. Dyson), 816

Margin, the southern, of the Absaroka range, geology along: a reply (J. D. Love), 101

Marsh, O. C., pioneer in paleontology. By Charles Schuchert and Clara Mae Le Vene. Review by A. S. Romer, 221

Marshall, P. Cited on the wearing of beach gravels (W. C. Krumbein), 485

Mass-movement, governing conditions of (R. H. Mitchell), 387

Mastodon americanus (*?*) in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 274

Measurements of recession of Lyman Glacier, Washington (O. W. Freeman), 771

Measuring grain boundaries in crystalline rocks (G. W. Bain), 199

Mechanism of origin of Snoqualmie-Cedar embankments, Washington (J. Hoover Mackin), 466

Megalonyx, McPherson County, Kansas (J. C. Frye and C. W. Hibbard), 272

Megalonyx leidyi Lindahl, McPherson County, Kansas (J. C. Frye and C. W. Hibbard), 273

Megascopic features of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 657

Melanite in Okanogan Valley, Washington (K. B. Krauskopf), 40

Menace to swimmers, rip currents are, southern California (F. P. Shepard *et al.*), 367

Metagabbro of Earl Mountain, Washington (K. B. Krauskopf), 28

Metamorphic rocks, pegmatites in, New Hampshire (C. A. Chapman), 376

Metamorphism, comments on retrograde (G. M. Schwartz and J. H. Todd), 177
contact, around the Osoyoos batholith, Washington (K. B. Krauskopf), 47
in the Lake Wakatipu region, western Otago, New Zealand. By C. Osborne Hutton. Review by C. W. Sternberg, 335
of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 665
of a roof pendant of the Idaho Springs formation, Front Range, Colorado (McClelland Dings), 825

Metasomatism of a coaly sediment into an igneous-appearing rock (G. E. Goodspeed, R. E. Fuller, and H. A. Coombs), 190

Method of measuring grain boundaries in crystalline rocks (G. W. Bain), 200

Methods of survey of rip currents, southern California (F. P. Shepard *et. al.*), 350

Methow glaciation, age of, Washington (J. D. Barksdale), 735
Valley, Washington, glaciation of the (J. D. Barksdale), 721

Microscopic features of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 658

Middle, a new, and Upper Pliocene formation of south-central Kansas, stratigraphy and paleontology of (J. C. Frye and C. W. Hibbard), 261

Miller, William J. *Studies for students: Recognition of faults in southern California*, 87

Milne, John. Earthquakes and other earth movements. Review by R. T. Chamberlin, 224

Milner, Henry B. Sedimentary petrography. Review by W. C. Krumbein, 332
Cited on order of persistence of heavy minerals (F. J. Pettijohn), 619

Mine, Night Hawk Peninsular, Night Hawk Lake, Ontario, wall-rock alteration at (A. R. Byers), 279

Mineral changes attributed to retrograde metamorphism (G. M. Schwartz and J. H. Todd), 179
composition as criterion for correlation of intrusive rocks (K. B. Krauskopf), 39
persistence and geologic age (F. J. Pettijohn), 614
variation, Red Lake area, Ontario (W. K. Gummer), 648

Mineralogical analyses, Red Lake area, Ontario (W. K. Gummer), 648
composition of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 658

Mineralogy and petrography, Red Lake area, Ontario (W. K. Gummer), 644

Minerals, persistence of heavy, and geologic age (F. J. Pettijohn), 610
Yearbook 1940, review of 1939. Compiled by H. H. Hughes. Review by C. W. Sternberg, 336

Minnesota, geophysical study of the Douglas fault, Pine County (G. I. Welch), 408

Mississippi River, Ozark segment of (R. F. Flint), 626

Mitchell, Robert H. *An unusual landslide*, 382

Modal ratios of various oxides (K. B. Krauskopf), 38

Modifications made necessary by discontinuance of the concept of grade in rivers (J. E. Kesseli), 585

Mohler, R. E. Cited on Emma Creek formation, Kansas (J. C. Frye and C. W. Hibbard), 276

Moneymaker, Berlen C. *Subriver solution cavities in the Tennessee Valley*, 74

Montana, recent glacier recession in Glacier National Park (J. L. Dyson), 815

Monterey quadrangle, summits of, Virginia–West Virginia (H. D. Thompson), 526
Staunton, and Harrisonburg quadrangles, topographic analysis of the (H. D. Thompson), 521

Moore, B. N. Cited on origin of Trabuco formation, California (W. P. Popenoe), 739, 747

Moore, E. S. Coal: its properties, analysis, classification, geology, extraction, uses, and distribution. Review by D. J. Fisher, 864

Morgan, R. S., and W. S. Woolridge. Cited on altimetric curves of summits (H. D. Thompson), 525
Cited on hypsographic curves (H. D. Thompson), 543

Motion, the theory of ground-water: discussion (H. Krutter), 324
the theory of ground-water: a reply (M. K. Hubbert), 327

Mountains, Santa Ana, the Trabuco and Baker conglomerates of the (W. P. Popenoe), 738

Movement of island of Cuba (R. H. Palmer), 775

Museum, Walker, new specimens of Permian vertebrates in (E. C. Olson, 753

Muskat, M. Cited on Darcy's law (M. K. Hubbert), 327
Cited on the flow of homogeneous fluids through porous media (H. Krutter), 324

Mylodon cf. *harlani* Owen in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 274

National introspection in geology (W. G. Woolnough), 414
Park, Glacier, Montana, recent glacier recession in (J. L. Dyson), 815

Nature of clay acid (E. R. Graham), 394
of recession of Lyman Glacier, Washington (O. W. Freeman), 766
of rip currents (F. P. Shepard *et al.*), 344

Neddick, Cape, Maine, contaminated complex dike at (J. C. Haff), 835

Nettleton, L. L. Geophysical prospecting for oil. Review by Kenneth L. Cook, 335

New Hampshire, the tectonic significance of some pegmatites in (C. A. Chapman), 370

New Mexico, quaternary geology of the San Acacia area (C. S. Denny), 225
volcanic rocks of the western San Augustin plains district (W. E. Powers), 207

New Middle and Upper Pliocene formation of south-central Kansas, stratigraphy and paleontology of a (J. C. Frye and C. W. Hibbard), 261
projection protractor, a: studies for students (D. J. Fisher) I, 292; II, 419
specimens of Permian vertebrates in Walker Museum (E. C. Olson), 753

New Zealand Alps (C. A. Cotton), 114

Nicholls, C. P. L. Cited on rip tides (F. P. Shepard *et al.*), 360, 361

Nichols, R. L. Cited on banding and projections in cracks in basaltic lavas (W. C. Fackler), 555

Night Hawk Peninsular Mine, Night Hawk Lake, Ontario, wall-rock alteration at (A. R. Byers), 279

Nölting, J. P., Jr., and H. M. Fridley. Cited on peneplains of Appalachian Plateau (W. S. Cole), 137

Nomenclature and correlation of Appalachian erosion surfaces (W. S. Cole), 129

Northern Appalachian plateaus, Pennsylvania (W. S. Cole), 130

Notion of balance, origin of, or equilibrium in rivers (J. E. Kesseli), 565

Occupations of doctorates in geology (Louis L. Ray), 860

Okanogan River, Washington (K B. Krauskopf), 1
Valley, intrusive rocks of the, and the problem of their correlation (K. B. Krauskopf), 1

Olson, Everett Claire. *The family Trematopsidae*, 149
New specimens of Permian vertebrates in Walker Museum, 753
Review of The mammalian fauna of the White River Oligocene. By William Berryman Scott and Glenn Lowell Jepsen. Part III: *Lagomorpha*. By Albert Elmer Wood. Part IV: *Artiodactyla*. By William Berryman Scott, 331

Ontario, Red Lake, border rocks of a granite batholith (W. K. Gummer), 641
wall-rock alteration at Night Hawk Peninsular Mine, Night Hawk Lake (A. R. Byers), 279
Ophiacodon major near Seymour, Texas. (E. C. Olson), 757
Ophiacodontia near Seymour, Texas (E. C. Olson), 753
Ophiacodontidae near Seymour, Texas (E. C. Olson), 757
Order of persistence of heavy minerals (F. J. Pettijohn), 618
Ore solutions, character of, Night Hawk Peninsular Mine, Ontario (A. R. Byers), 289
Origin of border rocks, Red Lake area, Ontario (W. K. Gummer), 653
of Cedar spillway, Washington (J. Hoover Mackin), 465
of clastic crevice fillings in Keweenawan lavas of Lake Superior region (W. C. Fackler), 556
of Daemonelix, the (A. L. Lugn), 673
hypotheses of consequent, subsequent, and superposed, of Ozark segment of Mississippi River (R. F. Flint), 628
of notion of balance or equilibrium in rivers (J. E. Kesseli), 565
of pediments, San Acacia area, New Mexico (C. S. Denny), 248
of rip currents, southern California (F. P. Shepard *et al.*), 361
of rocks composing roof pendant, Idaho Springs formation, Colorado (McClelland Dings), 831
of Scabland, Flint's fill hypothesis of (I. S. Allison), 54
of the Snoqualmie-Cedar embankments, Washington (J. Hoover Mackin), 453
of submarine canyons: a critical review of hypotheses. By Douglas Johnson. Review by John L. Rich, 107
Orthographic projection (D. J. Fisher), 312
Ortiz surface, San Acacia area, New Mexico (C. S. Denny), 235
Osage River, Missouri (R. F. Flint), 634
Osoyoos batholith, Washington (K. B. Krauskopf), 12
–Colville border zone, Washington (K. B. Krauskopf), 17
granodiorite, Washington (K. B. Krauskopf), 12
Otto, George H. Review of The examination of fragmental rocks. By Frederick G. Tickell, 780
Overdeepening, hypothesis of (C. A. Cotton), 122
Oxide variation, Red Lake area, Ontario (W. K. Gummer), 651
Ozark segment of Mississippi River (R. F. Flint), 626
topographic dome (R. F. Flint), 634

Packard, E. L. Cited on Trabuco formation, California (W. P. Popenoe), 738, 747, 748, 752
Page, Ben M. Cited on glaciation in Leavenworth area, Washington (J. D. Barksdale), 736
Paleontology, stratigraphy and, of a new Middle and Upper Pliocene formation of south-central Kansas (J. C. Frye and C. W. Hibbard), 261
Paleozoic age of Appalachian Valley (B. C. Moneymaker), 76
Palmer, R. H. *An active syncline*, 772
Palouse River Canyon, Washington (I. S. Allison), 69
"Palouse soil," Washington (I. S. Allison), 55
Parallel gullies on the slopes of Lassen Peak (C. R. Swartzlow), 402
Parelephas columbi (Falconer) in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 274
Park, Glacier National, Montana, recent glacier recession in (J. L. Dyson), 815
Pasco Basin, Washington (I. S. Allison), 57
Paths, theoretical, of ground-water flow (R. Rhoades and M. N. Sinacori), 787
Pattern of ground-water flow and solution (R. Rhoades and M. N. Sinacori), 785
Peak, Lassen, parallel gullies on the slopes of (C. R. Swartzlow), 402
Pebble size in Trabuco and Baker conglomerates, California (W. P. Popenoe), 747
Pediments, origin of, San Acacia area, New Mexico (C. S. Denny), 248
Pegmatites associated with small shear zones, New Hampshire (C. A. Chapman, 373

within Bethlehem gneiss, New Hampshire (C. A. Chapman), 372
filled-fissure, New Hampshire (C. A. Chapman), 374
Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 602
in metamorphic rocks, New Hampshire (C. A. Chapman), 376
in New Hampshire, the tectonic significance of some (C. A. Chapman), 370
Pelycosauria near Seymour, Texas (E. C. Olson), 753
Penck, A. Cited on glacial features in surface of Alps (C. A. Cotton), 125
Cited on law of adjusted cross sections (C. A. Cotton), 122, 123
Pendant, metamorphism of a roof, of the Idaho Springs formation, Front Range, Colorado (McClelland Dings), 825
Peneplanation and uplift of Ozark topographic dome (R. F. Flint), 639
Peninsular Mine, Night Hawk, Night Hawk Lake, Ontario, wall-rock alteration at (A. R. Byers), 279
Permian vertebrates, new specimens of, in Walker Museum (E. C. Olson), 753
Persistence of heavy minerals and geologic age (F. J. Pettijohn), 610
Peterson, O. A. Cited on origin of Daemonelix (A. L. Lugn), 680
Petrofabric analysis of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 661
Petrographic features of Red Lake area, Ontario (W. K. Gummer), 651
summary of, of central Texas granites (S. S. Goldich), 709
Petrography of contaminated complex dike, Cape Neddick, Maine (J. C. Haff), 840
and mineralogy of Red Lake area, Ontario (W. K. Gummer), 644
Petrology and genesis of the Third Bradford Sand. By Paul D. Krynine. Review by F. J. Pettijohn, 448
of south-central Kansas (J. C. Frye and C. W. Hibbard), 266
Pettijohn, F. J. *Persistence of heavy minerals and geologic age*, 610
Review of Petrology and genesis of the Third Bradford Sand. By Paul D. Krynine, 448
The physical sciences. By E. J. Cable *et al.* Review by C. W Sternberg, 781
Pine County, Minnesota, geophysical study of the Douglas fault (G. I. Welch), 408
Piracy of the lower Rio Salado (C. S. Denny), 242
Plagioclase in Okanogan Valley, Washington (K. B. Krauskopf), 43
Plains district, western San Augustin, New Mexico, volcanic rocks of the (W. E. Powers), 207
Pliocene formation, a new Middle and Upper, of south-central Kansas, stratigraphy and paleontology of (J. C. Frye and C. W. Hibbard), 261
Polar axis (D. J. Fisher), 301
co-ordinates (D. J. Fisher), 432
diameter (D. J. Fisher), 294, 308
distance of a circle (D. J. Fisher), 439
distance of a point (D. J. Fisher), 299
stereographic net (D. J. Fisher), 308
triangles (D. J. Fisher), 422
Popenoe, W. P. *The Trabuco and Baker conglomerates of the Santa Ana Mountains*, 738
Porphyritic gneiss, zone of, in Washington (K. B. Krauskopf), 9
textures, central Texas granites (S. S. Goldich), 718
Potash feldspar in Okanogan Valley, Washington (K. B. Krauskopf), 42
Powers, William E. *Volcanic rocks of the western San Augustin plains district, New Mexico*, 207
Pre-Cambrian age of Appalachian Mountain region (B. C. Moneymaker), 75
gneiss from the San Rafael swell, Utah (R. A. Hatch), 657
Preglacial constrictions, hypothesis of (C. A. Cotton), 117
Preservation of Daemonelix (A. L. Lugn), 692
Principles of sedimentation. By W. H. Twenhofel. Review by H. R. Wanless, 862
Probable early Vashon extension of Cascade glaciers (J. Hoover Mackin), 471
Problem of their correlation, intrusive rocks of the Okanogan Valley and the (K. B. Krauskopf), 1
Process, a, of geological importance: rip currents (F. P. Shepard, K. O. Emery, and E. C. La Fond), 337

Profiles, geomorphic, of San Acacia area, New Mexico (C. S. Denny), 230
the longitudinal, of glaciated valleys (C. A. Cotton), 113
Projection protractor, a new: studies for students (D. J. Fisher) I, 292; II, 419
symbolism and relations (D. J. Fisher), 313
Protractor, a new projection: studies for students (D. J. Fisher), I, 292; II, 419
Publications received, 110, 782
Pyroxene in Okanogan Valley, Washington (K. B. Krauskopf), 44

Quadrangles, the Monterey, Staunton, and Harrisonburg, topographic analysis of (H. D. Thompson), 521
Quartz diorite, Okanogan Valley (K. B. Krauskopf), 19
in Okanogan Valley, Washington (K. B. Krauskopf), 42
Quaternary geology of the San Acacia area, New Mexico (C. S. Denny), 225
terrace alluvium in inner channels off Scripps Institution pier, southern California (F. P. Shepard *et al.*), 352
Quirke, T. T., and W. C. Lacy. *Deep-zone dome and basin structures*, 589

Range, the Absaroka, geology along the southern margin of: a reply (J. D. Love), 101
Front, Colorado, metamorphism of a roof pendant of the Idaho Springs formation (McClelland Dings), 825
Ray, Louis L. *American doctorates in geology, 1931–40*, 854
Recent glacier recession in Glacier National Park, Montana (J. L. Dyson), 815
Recession of individual glaciers, Glacier National Park, Montana (J. L. Dyson), 816
of Lyman Glacier, Washington, the (O. W. Freeman), 764
of Lyman Glacier, Washington, measurements of (O. W. Freeman), 771
of Lyman Glacier, Washington, nature of (O. W. Freeman), 766
recent glacier, in Glacier National Park, Montana (J. L. Dyson), 815
Recognition of faults in southern California: studies for students (W. J. Miller), 87
Red Lake, Ontario, border rocks of a granite batholith (W. K. Gummer), 641
Reflection twin (D. J. Fisher), 440
Relation of breaker zone to rip currents, southern California (F. P. Shepard *et al.*), 350
of Emma Creek formation to younger formations (J. C. Frye and C. W. Hibbard), 270
of ideal pattern of ground-water circulation to bedrock solution (R. Rhoades and M. N. Sinacori), 791
of Mississippi River to Ozark topographic dome (R. F. Flint), 628
of rip currents to coastal and shoreline configuration, southern California (F. P. Shepard *et al.*), 343
of rip currents to wave fronts, southern California (F. P. Shepard *et. al.*), 358
of rip currents to waves, southern California (F. P. Shepard *et al.*), 356
of thickness of Mississippian limestones in central and eastern Kansas to oil and gas deposits. By Wallace Lee. Review by Louise Barton Freeman, 560
of the Yakima basalt to the Keechelus andesitic series (W. C. Warren), 795
Relations among size, shape, and roundness during abrasion (W. C. Krumbein), 488
of embankments to lakes and lacustrine sediments up-valley, Washington (J. Hoover Mackin), 461
of local Cascade glaciers to Vashon Puget Glacier, Washington (J. Hoover Mackin), 469
Relationship of rip currents to other phenomena, southern California (F. P. Shepard *et al.*), 355
Relationships of family Trematopsidae in Texas redbeds (E. C. Olson), 173
Relative age of central Texas granites (S. S. Goldich), 719
A reply: the theory of ground-water motion (M. K. Hubbert), 327
Resource-Full Kansas. By Kenneth K. Landes and Oren R. Bingham. Review by C. W. Sternberg, 448
Résumé of Quaternary history, San Acacia area, New Mexico (C. S. Denny), 259
Retrograde metamorphism, comments on (G. M. Schwartz and J. H. Todd), 177

definition of (G. M. Schwartz and J. H. Todd), 187
Review of tumbling-barrel studies (W. C. Krumbein), 483
Rhachitomi near Seymour, Texas (E. C. Olson), 762
of Texas redbeds (E. C. Olson), 149
Rhoades, Roger, and M. N. Sinacori. *Pattern of ground-water flow and solution*, 785
Rhyolitic rocks in western Washington (G. E. Goodspeed, R. E. Fuller, and H. A. Coombs), 190
Ri[illegible], John L. Review of The origin of submarine canyons: a critical review of hypotheses. By Douglas Johnson, 107
Cited on criteria of peneplanation (H. D. Thompson), 522
Ridges, principal, from Allegheny Front to Blue Ridge (H. D. Thompson), 537
Riggs, E. S. Cited on origin of Daemonelix (A. L. Lugn), 681
Rio Grande depression, New Mexico (C. S. Denny), 225, 226
Rio Puerco, lower, San Acacia area, New Mexico (C. S. Denny), 239
Rio Salado, lower, New Mexico (C. S. Denny), 242
Rip currents as a menace to swimmers, southern California (F. P. Shepard *et al.*), 367
description of, southern California (F. P. Shepard, K. O. Emery, and E. C. La Fond), 340
nature of, southern California (F. P. Shepard *et al.*), 344
origin of, southern California (F. P. Shepard *et al.*), 361
a process of geological importance (F. P. Shepard, K. O. Emery, and E. C. La Fond), 337
significance of, southern California (F. P. Shepard *et al.*), 364
Rittenhouse, G., S. C. Happ, and G. C. Dobson. Some principles of accelerated stream and valley sedimentation. Review by C. W. Sternberg, 334
River, the graded, the concept of (J. E. Kesseli), 561
Mississippi, Ozark segment of (R. F. Flint), 626
Rock fragments, the effects of abrasion on the size, shape, and roundness of (W. C. Krumbein), 482
an igneous-appearing, metasomatism of a coaly sediment into (G. E. Goodspeed, R. E. Fuller, and H. A. Coombs), 190
types in Lookout Island, Ontario, area (T. T. Quirke and W. C. Lacy), 591
Rocks, border, of a granite batholith, Red Lake, Ontario (W. K. Gummer), 641
crystalline, measuring grain boundaries in (G. W. Bain), 199
intrusive, of the Okanogan Valley and the problem of their correlation (K. B. Krauskopf), 1
in the region of Idaho Springs formation, Colorado (McClelland Dings), 828
volcanic, of the western San Augustin plains district, New Mexico (W. E. Powers), 207
Rocky coasts, relation of rip currents to, southern California (F. P. Shepard *et al.*), 344
Romano syncline, Cuba (R. H. Palmer), 772
Romer, A. S. Review of O. C. Marsh, pioneer in paleontology. By Charles Schuchert and Clara Mae Le Vene, 221
Roof pendant of Idaho Springs formation, Colorado, structure of (McClelland Dings), 831
metamorphism of a, of the Idaho Springs formation, Front Range, Colorado (McClelland Dings), 825
origin of rocks composing, Idaho Springs formation, Colorado (McClelland Dings), 831
Rotation problem (D. J. Fisher), 428
Rounding of pebbles in Trabuco and Baker conglomerates, California (W. P. Popenoe), 747
Roundness of rock fragments, the effects of abrasion on the size, shape, and (W. C. Krumbein), 482
Russell, I. C. Cited on geology and water resources of Nez Perce County, Idaho (W. C. Warren), 811
Cited on glaciation in Methow Valley, Washington (J. D. Barksdale), 721

Sallal moraine, Washington (J. Hoover Mackin), 475
San Augustin plains district, New Mexico, volcanic rocks of the western (W. E. Powers), 207

Sand dunes in San Acacia area, New Mexico (C. S. Denny), 255

San Rafael swell, Utah, a pre-Cambrian gneiss from the (R. A. Hatch), 657

Santa Ana Mountains, the Trabuco and Baker conglomerates of the (W. P. Popenoe), 738

Sapping, subglacial, hypothesis of (C. A. Cotton), 126

Scabland deposits, constructional forms of, Washington (I. S. Allison), 66
Flint's fill hypothesis of origin of (I. S. Allison), 54

Scarps cutting across drainage courses as criterion for location of faults in southern California (W. J. Miller), 94
in relation to alluvial cones and *playa* basins as criterion for location of faults in southern California (W. J. Miller), 95
and terraces in "Palouse soil," Washington (I. S. Allison), 55

Scenery of Florida interpreted by a geologist. By C. Wythe Cooke. Review by L. B. Freeman, 670

Schistosity and flow lines at Lookout Island, Ontario (T. T. Quirke and W. C. Lacy), 598

Schmedeman, O.C. Cited on chemistry of ore solutions (A. R. Byers), 290

Schoklitsch, A. Cited on pebble abrasion (W. C. Krumbein), 487

Schuchert, Charles, and Carl O. Dunbar. Textbook of geology, Part II: Historical geology. Review by Carey Croneis, 776

Schuchert, Charles, and Clara Mae Le Vene. O. C. Marsh, pioneer in paleontology. Review by A. S. Romer, 221

Schultz, C. B. Cited on Daemonelix (A. L. Lugn), 681

Schwartz, George M., and James H. Todd. *Comments on retrograde metamorphism*, 177

Scott, William Berryman. *Artiodactyla*, Part IV of The mammalian fauna of the White River Oligocene. By William Berryman Scott and Glenn Lowell Jepsen. Review by E. C. Olson, 331

Seaward movement of floating objects as criterion for determining rip currents (F. P. Shepard *et al.*), 342

Sederholm, J. J. Cited on "palingenesis" (T. T. Quirke and W. C. Lacy), 596

Sediment-laden water as criterion for determining rip currents, southern California (F. P. Shepard *et al.*), 340
metasomatism of a coaly, into an igneous-appearing rock (G. E. Goodspeed, R. E. Fuller, and H. A. Coombs), 190
outward transportation of, by rip currents, southern California (F. P. Shepard *et al.*), 364

Sedimentary petrography. By Henry B. Milner. Review by W. C. Krumbein, 332

Segment, Ozark, of Mississippi River (R. F. Flint), 626

Sericitization of pyrite in Night Hawk Peninsular Mine, Ontario (A. R. Byers), 283

Series, relation of the Yakima basalt to the Keechelus andesitic (W. C. Warren), 795

Seymouria baylorensis near Seymour, Texas (E. C. Olson), 762

Seymouriamorpha near Seymour, Texas (E. C. Olson), 762

Seymouridae near Seymour, Texas (E. C. Olson), 762

Shape and roundness of rock fragments, the effects of abrasion on the size (W. C. Krumbein), 482

Sharpe, C. F. Stewart. Cited on classification of mass-movements (R. H. Mitchell), 382, 383, 386

Shaw, E. W. Cited on Quaternary deformation in southern Illinois and southeastern Missouri (R. F. Flint), 626

Shepard, F. P., *et al. Rip currents: a process of geological importance*, 337

Shifting of channels in path of rip current, southern California (F. P. Shepard *et al.*), 354

Sierra Ladron, New Mexico (C. S. Denny), 231

Significance, cyclic, of summits, Appalachian Mountains (H. D. Thompson), 524
of rip currents, southern California (F. P. Shepard *et al.*), 364
of solution cavities within zone of saturation, Tennessee Valley (B. C. Moneymaker), 85

the tectonic, of some pegmatites in New Hampshire (C. A. Chapman), 370
Silver Plume Granite, Front Range, Colorado (McClelland Dings), 828
Similkameen granodiorite, Washington (K. B. Krauskopf), 21
Simple segregation pegmatites, New Hampshire (C. A. Chapman), 372
Sinacori, M. N., and Roger Rhoades. *Pattern of ground-water flow and solution*, 785
Sinclair, W. J., and Walter Granger. Cited on Wind River and Bighorn basins (J. D. Love), 103
Sixmile granites in central Texas (S. S. Goldich), 704
Size, shape, and roundness of rock fragments, the effects of abrasion on the (W. C. Krumbein), 482
of Snoqualmie-Cedar embankments, Washington (J. Hoover Mackin), 468
Slopes, of Lassan Peak, parallel gullies on the (C. R. Swartzlow), 402
Smilodon sp. in McPherson formation, Kansas (J. C. Frye and C. W. Hibbard), 274
Smith, G. O. Cited on age of lower part of Keechelus, Washington (W. C. Warren), 810
Cited on geology and water resources of Yakima County, Washington (W. C. Warren), 796
Smithson, F. Cited on statistical methods in sedimentary petrology (F. J. Pettijohn), 621
Snake River Canyon, Washington (I. S. Allison), 57
fill, Washington (I. S. Allison), 59
Snoqualmie-Cedar area, Washington, glacial geology of the (J. Hoover Mackin), 449
–Cedar embankments, Washington, origin of (J. Hoover Mackin), 453
embayment, deglaciation of, Washington (J. Hoover Mackin), 474
Falls, origin of (J. Hoover Mackin), 477
Socorro County, New Mexico (C. S. Denny), 226
Mountains, New Mexico (C. S. Denny), 231
Solution cavities, subriver, in the Tennessee Valley (B. C. Moneymaker), 74
pattern of ground-water flow and (R. Rhoades and M. N. Sinacori), 785
Some principles of accelerated stream and valley sedimentation. By S. C. Happ, G. Rittenhouse, and G. C. Dobson. Review by C. W. Sternberg, 334
Sorting of beach sands by rip currents, southern California (F. P. Shepard *et al.*), 364
Sources of Methow ice, Washington (J. D. Barksdale), 725
South-central Kansas, stratigraphy and paleontology of a new Middle and Upper Pliocene formation of (J. C. Frye and C. W. Hibbard), 261
Southern California, recognition of faults in: studies for students (W. J. Miller), 87
margin, the, of the Absaroka range, geology along: a reply (J. D. Love), 101
Specimens, new, of Permian vertebrates in Walker Museum (E. C. Olson), 753
Sperry Glacier, Montana (J. L. Dyson), 818
Sphene in Okanogan Valley, Washington (K. B. Krauskopf), 39
Springs, Idaho, formation, Front Range, Colorado, metamorphism of a roof pendant of the (McClelland Dings), 825
Stability of minerals (F. J. Pettijohn), 622
Stagner, H. R., and L. H. Daugherty. The upper Triassic flora of Arizona. Review by E. P. Du Bois, 671
Stanley, George M. Review of Geology of the Chicago region. By J Harlen Bretz, 446
Staunton, the Monterey, and Harrisonburg quadrangles, topographic analysis of (H. D. Thompson), 521
quadrangle, summits of, Virginia–West Virginia (H. D. Thompson), 529
Steepness of slope of ridges in Monterey, Staunton, and Harrisonburg quadrangles, Virginia–West Virginia (H. D. Thompson), 540
Stenzel, H. B. Cited on central Texas granites (S. S. Goldich), 698
Stereographic angle (D. J. Fisher), 308
center (D. J. Fisher), 436, 438
face pole (D. J. Fisher), 317
lower pole (D. J. Fisher), 317
net (D. J. Fisher), 294
pole (D. J. Fisher), 317

projection (D. J. Fisher), 300
scale (D. J. Fisher), 294, 296
solution (D. J. Fisher), 305
Sternberg, C. W. Review of The American empire. By William H. Haas (ed.), 672
Review of Metamorphism in the Lake Wakatipu region, western Otago, New Zealand. By C. Osborne Hutton, 335
Review of Minerals yearbook 1940, review of 1939. Compiled by H. H. Hughes, 336
Review of The physical sciences. By E. J. Cable *et al.*, 781
Review of Resource-Full Kansas. By Kenneth K. Landes and Oren R. Bingham, 448
Review of Some principles of accelerated stream and valley sedimentation. By S. C. Happ, G. Rittenhouse, and G. C. Dobson, 334
Review of Studies of Cenozoic vertebrates and stratigraphy of western North America. By Paul C. Henshaw *et al.*, 447
Stose, G. W. Cited on age of Appalachian erosion surfaces (W. S. Cole), 146
and H. D. Miser. Cited on peneplains of western Virginia (H. D. Thompson), 521
Stow, M. H. Cited on abundance and persistence of heavy minerals (F. J. Pettijohn), 625
Straight scarps cutting across country as criterion for location of faults in southern California (W. J. Miller), 94
Stratigraphy of Keechelus andesitic series, Washington (W. C. Warren), 799
and paleontology of a new Middle and Upper Pliocene formation of south-central Kansas (J. C. Frye and C. W. Hibbard), 261
of south-central Kansas (J. C. Frye and C. W. Hibbard), 263
Stream courses cutting across rocks and structures as criterion for location of faults in southern California (W. J. Miller), 95
fully loaded, appearance of a (J. E. Kesseli), 579
pattern in Ozark topographic dome (R. F. Flint), 636
Strength and structure of the earth. By Reginald Aldworth Daly. Review by R. T. Chamberlin, 443
Structural units of western New Hampshire (C. A. Chapman), 371
Structure of lower Keechelus rocks, Washington (W. C. Warren), 799
of the roof pendant, Idaho Springs formation, Colorado (McClelland Dings), 827
sections of "Equus Beds," McPherson, Kansas (J. C. Frye and C. W. Hibbard), 269
of Trabuco and Baker conglomerates, California (W. P. Popenoe), 745
of volcanics, San Augustin plains, New Mexico (W. E. Powers), 217
Structures, Daemonelix (A. L. Lugn), 674
deep-zone dome and basin (T. T. Quirke and W. C. Lacy), 589
Studies of Cenozoic vertebrates and stratigraphy of western North America. By Paul C. Henshaw *et al.* Review by C. W. Sternberg, 447
for students: a new projection protractor (D. J. Fisher) I, 292; II, 419
for students: recognition of faults in southern California (W. J. Miller), 87
Stutzer, Otto. Geology of coal. Review by Thomas A. Hendricks, 669
Subglacial sapping, hypothesis of (C. A. Cotton), 126
Submarine canyons, possible relation of rip currents to, southern California (F. P. Shepard *et al.*), 366
Subriver cavities in Appalachian Mountain region (B. C. Moneymaker), 79
cavities in Appalachian Valley region (B. C. Moneymaker), 79
cavities in Central Basin and Highland Rim region (B. C. Moneymaker), 84
cavities in Cumberland Plateau region (B. C. Moneymaker), 82
cavities in Mississippi embayment region (B. C. Moneymaker), 84
solution cavities in the Tennessee Valley (B. C. Moneymaker), 74
Subsurface movement of rip currents, southern California (F. P. Shepard *et al.*), 348
Succession of volcanic rocks in New Mexico (W. E. Powers), 209
Summits, cyclic significance of, in Appalachian Mountains (H. D. Thompson), 524
of Harrisonburg quadrangle, Virginia (H. D. Thompson), 532

on large-scale maps, Monterey, Staunton, and Harrisonburg quadrangles, Virginia–West Virginia (H. D. Thompson), 534
Sunbury-Mahanoy section of Appalachian erosion surfaces (W. S. Cole), 140
Surell, Alexandre. Cited on balance in the work of streams (J. E. Kesseli), 565
Surface manifestations of rip currents, southern California (F. P. Shepard *et al.*), 340
movement in rip currents (F. P. Shepard *et al.*), 344
Surfaces, Appalachian erosion, nomenclature and correlation of (W. S. Cole), 129
Survey of North Greenland. By Lauge Koch. Review by R. T. Chamberlin, 779
Swartzlow, Carl R. *Parallel gullies on the slopes of Lassen Peak*, 402
Swell, the San Rafael, Utah, a pre-Cambrian gneiss from the (R. A. Hatch) 657
Swinnerton, A. C. Cited on origin of limestone caverns (R. Rhoades and M. N. Sinacori), 786
Swirled gneiss, zone of, in Washington (K. B. Krauskopf), 9
Symbolism, projection, and relations (D. J. Fisher), 313
Syncline, an active (R. H. Palmer), 772

Tabulation of summits on formations in Harrisonburg quadrangle, Virginia (H. D. Thompson), 533
of summits on formations in Monterey quadrangle, Virginia–West Virginia (H. D. Thompson), 528
of summits on formations in Staunton quadrangle, Virginia–West Virginia (H. D. Thompson), 531
Taylor, Griffith. Cited on headward glacial erosion (C. A. Cotton), 127, 128
Cited on "palimpsest" theory (C. A. Cotton), 128
The tectonic significance of some pegmatites in New Hampshire (C. A. Chapman), 370
Tennessee Valley, subriver solution cavities in the (B. C. Moneymaker), 74
Tertiary basin deposits, San Acacia area, New Mexico (C. S. Denny), 233
Tester, A. C. Cited on contributions of American and European geologists (W. G. Woolnough), 414
Tetralophodon elegans (Hay) in Emma Creek formation, Kansas (J. C. Frye and C. W. Hibbard), 277
Texas, central, granites, evolution of the (S. S. Goldich), 697
Textbook of geology, Part II: Historical geology. By Charles Schuchert and Carl O. Dunbar. Review by Carey Croneis, 776
Texture and structure of pre-Cambrian gneiss from San Rafael swell, Utah (R. A. Hatch), 658
Theoretical paths of ground-water flow (R. Rhoades and M. N. Sinacori), 787
The theory of ground-water motion: discussion (H. Krutter), 324
The theory of ground-water motion: a reply (M. K. Hubbert), 327
Theory of retrograde metamorphism, basis of (G. M. Schwartz and J. H. Todd), 178
Thomas, H. H. Cited on detrital andalusite in Tertiary and post-Tertiary sands (F. J. Pettijohn), 623
Thompson, H. D. *Topographic analysis of the Monterey, Staunton, and Harrisonburg quadrangles*, 521
Thoulet, J. Cited on increase in complexity of heavy-mineral suites with decreasing geologic age (F. J. Pettijohn), 610, 619
Tickell, Frederick G. The examination of fragmental rocks. Review by George H. Otto, 780
Tides, relation of rip currents to, southern California (F. P. Shepard *et al.*), 360
Tieton andesite in Mount Aix quadrangle, Washington (W. C. Warren), 806
Tio Bartolo surface, San Acacia area, New Mexico (C. S. Denny), 236
Todd, James H., and George M. Schwartz. *Comments on retrograde metamorphism*, 177
Topographic analysis of the Monterey, Staunton, and Harrisonburg quadrangles (H. D. Thompson), 521
form of embankment, Snoqualmie-Cedar area, Washington (J. Hoover Mackin), 458

Topography of San Acacia area, New Mexico (C. S. Denny), 231
Touchet beds "transition," Washington (I. S. Allison), 59
Town Mountain granites in central Texas (S. S. Goldich), 701
The Trabuco and Baker conglomerates of the Santa Ana Mountains (W. P. Popenoe), 738
Trematops milleri Williston near Seymour, Texas (E. C. Olson), 762
milleri Williston in Texas redbeds (E. C. Olson), 156
thomasi Mehl from the Permian of Oklahoma (E. C. Olson), 158
Williston in Texas redbeds (E. C. Olson), 156
willistoni n. sp. in Texas redbeds (E. C. Olson), 157
Trematopsidae, the family (E. C. Olson), 149
habits of, in Texas redbeds (E. C. Olson), 175
near Seymour, Texas (E. C. Olson), 762
Twenhofel, W. H. Principles of sedimentation. Review by H. R. Wanless, 862
Cited on work of burrowing animals (W. G. Woolnough), 416
Tyrell, G. W. Cited on retrograde metamorphism (G. M. Schwartz and J. H. Todd), 184

Udden, J. A. Cited on age of McPherson deposits, Kansas (J. C. Frye and C. W. Hibbard), 272
Undertow, inadequacy of, southern California (F. P. Shepard *et al.*), 361
Unusual landslide, an (R. H. Mitchell), 382
Upper, a new Middle and, Pliocene formation of south-central Kansas, stratigraphy and paleontology of (J. C. Frye and C. W. Hibbard), 261
Triassic flora of Arizona. By L. H. Daugherty and H. R. Stagner. Review by E. P. Du Bois, 671

Valle de Parida surface, San Acacia area, New Mexico (C. S. Denny), 242
Valley, Methow, Washington, glaciation of the (J. D. Barksdale), 721
the Okanogan, intrusive rocks of, and the problem of their correlation (K. B. Krauskopf), 1
profiles in Ozark topographic dome (R. F. Flint), 636
Tennessee, subriver solution cavities in the (B. C. Moneymaker), 74
Valleys, glaciated, the longitudinal profiles of (C. A. Cotton), 113
Vashon Puget Glacier, relations of local Cascade glaciers to the, Washington (J. Hoover Mackin), 469
Vegetation of San Acacia area, New Mexico (C. S. Denny), 234
Ventifacts in San Acacia area, New Mexico (C. S. Denny), 256
Ver Steeg, K. Cited on erosion surfaces (W. S. Cole), 131
Vertebrate fossils, McPherson County, Kansas (J. C. Frye and C. W. Hibbard), 271
Vertebrates, Permian, in Walker Museum, new specimens of (E. C. Olson), 753
Volcanic rocks, Red Lake area, Ontario (W. K. Gummer), 644
of the western San Augustin plains district, New Mexico (W. E. Powers), 207
Von Engeln, O. D. Cited on subglacial sapping (C. A. Cotton), 127, 128

Wager L. R., and W. A. Deer. Geological investigations in East Greenland, Part III: The petrology of the Skaergaard intrusion, Kangerdlugssuaq, East Greenland. Review by L. B. Freeman, 670
Walker Museum, new specimens of Permian vertebrates in (E. C. Olson), 753
Wall-rock alteration at Night Hawk Peninsular Mine, Night Hawk Lake, Ontario (A. R. Byers), 279
Wanless, H. R. Review of Principles of sedimentation. By W. H. Twenhofel, 862
Warren, Walter C. *Relation of the Yakima basalt to the Keechelus andesitic series*, 795
Washington, glacial geology of the Snoqualmie-Cedar area (J. Hoover Mackin), 449
glaciation of the Methow Valley (J. D. Barksdale), 721
the recession of Lyman Glacier (O. W. Freeman), 764
Waters, A. C. Cited on geology of Chelan area, Washington (J. D. Barksdale), 723

Cited on mechanism of intrusion, Okanogan Valley, Washington (K. B. Krauskopf), 11
Cited on resurrected erosion surface in central Washington (W. C. Warren), 811
Cited on Similkameen granodiorite, Washington (K. B. Krauskopf), 23

Wave and rip variations along different coasts, southern California (F. P. Shepard *et al.*), 357
fronts, relation of rip currents to, southern California (F. P. Shepard *et al.*), 358

Waves, relation of rip currents to, southern California (F. P. Shepard *et al.*), 356

Weathering, an agent in chemical—acid clay (E. R. Graham), 392

Welch, George I. *Geophysical study of the Douglas fault, Pine County, Minnesota*, 408

Wentworth, C. K. Cited on American doctorates in geology (Louis L. Ray), 854
Cited on study of abrasion (W. C. Krumbein), 484

Western San Augustin plains district, New Mexico, volcanic rocks of the (W. E. Powers), 207

Whisky Mountain, Washington (K. B. Krauskopf), 4

Width and outward extent of rip currents (F. P. Shepard *et al.*), 342

Willis, Bailey. Review of The geology of China. By J. S. Lee, 218
Cited on faulting in California (W. J. Miller), 88
Cited on glacial geology of Puget region (J. Hoover Mackin), 450

Williston, S. W. Cited on family Trematopsidae (E. C. Olson), 149
Cited on fauna of Equus beds, Kansas (J. C. Frye and C. W. Hibbard), 273

Winds, relation of rip currents to, southern California (F. P. Shepard *et al.*), 359

Wood, A. E. *Lagomorpha*, Part III of The mammalian fauna of the White River Oligocene. By William B. Scott and Glenn L. Jepsen. Review by E. C. Olson, 331

Wood, H. E., and A. E. Cited on Daemonhelix in Pleistocene of Texas (A. L. Lugn), 682

Woolnough, W. G. *National introspection in geology*, 414

Woolridge, S. W., and R. S. Morgan. Cited on altimetric curves of summits (H. D. Thompson), 525
Cited on hypsographic curves (H. D. Thompson), 543

Wright, F. J. Cited on the newer Appalachians of the South (H. D. Thompson), 521, 548

Wulff net (D. J. Fisher), 294

Yakima basalt, Mount Aix quadrangle, Washington (W. C. Warren), 802
relation of the, to the Keechelus andesitic series (W. C. Warren), 795

Zanesville, Ohio (R. H. Mitchell), 382

Zircon in Okanogan Valley, Washington (K. B. Krauskopf), 39

Zone axis (D. J. Fisher), 314, 319
center (D. J. Fisher), 311, 315
central (D. J. Fisher), 311, 313, 315
edge (D. J. Fisher), 319
line (D. J. Fisher), 311, 314, 315
symbol (D. J. Fisher), 320

Zones of excessive jointing as criterion for location of faults in southern California (W. J. Miller), 93

2380 35